

**MONTANA FISH, WILDLIFE & PARKS**  
**FINAL PERFORMANCE REPORT**

**STATE:** MONTANA  
**GRANT TITLE:** Yellowstone Corridor Native Fish & Wildlife Survey  
**AGREEMENT:** T - 28 - 2  
**PERIOD COVERED:** January 1, 2007 through March 31, 2009

**Objective**

1. Describe seasonal movement patterns and habitat use of adult blue sucker, channel catfish, and burbot.
2. Identify and describe blue sucker spawning habitats.
3. Identify potential burbot spawning aggregations
4. Develop stock forecasting methods, stock assessment methods, and investigate how environmental factors affect the spawning, migration, and fishing success of paddlefish.
5. Describe distribution of snapping and soft-shell turtles, as well as movements and habitat use of spiny soft-shell turtles.
6. Determine distribution and nesting success of interior least terns, piping plovers, and bald eagles.

**Location**

The study occurred in the Yellowstone River Corridor in southeastern Montana, between Billings and the North Dakota border.

**Accomplishments**

The goal of this study was to increase the knowledge base for ecologically and culturally important native Yellowstone River fish and wildlife to guide the formulation of management strategies that will benefit this unique ecosystem. Specific emphasis was placed on spiny soft-shell turtles, bald eagles, blue sucker, burbot, channel catfish, and shovelnose sturgeon because of a combination of scarcity or recreational and cultural importance and a limited knowledge base.

Between 2005 and 2009 blue suckers, shovelnose sturgeon, channel catfish, burbot, and spiny softshell turtles were telemetered and relocated to assess movements and habitat use. Net movement rates of blue suckers, shovelnose sturgeon, channel catfish, burbot varied among seasons ( $P < 0.05$ ). Blue suckers migrated into the Yellowstone River each spring and returned to the Missouri River each winter. Shovelnose sturgeon, channel catfish, and burbot migrated up and downstream within the Yellowstone River reach year. No fish species used all habitats in proportion to their availability during any season ( $P < 0.05$ ) and use of habitats was variable among species. The combination of seasonal migrations or movements and wide diversity of habitat use throughout the year among species emphasizes the importance of maintaining habitat connectivity and diversity.

A cooperative Paddlefish Management Plan was developed between Montana and North Dakota to guide future management activities and goals for the species. A copy of the plan can be obtained from FWP upon request, and will be available on the FWP website in the near future.

Net movement rates of spiny softshell turtles did not vary among seasons ( $P=0.906$ ); upstream and downstream movements occurred during all seasons, although turtles were relatively sedentary during winter. Spiny softshell turtles did not use habitats in proportion to their availability during any season ( $P<0.05$ ). Secondary channels were selected during all seasons other than winter and turtles generally demonstrated higher selection of unarmored pools (bluff, terrace, scour) than their armored equivalents (rip-rap valley margin and bottom). Diversion dams were avoided during all seasons. Accordingly, spiny softshell turtles appear to be especially sensitive to anthropogenic alteration (streambank armoring, impoundment) of river ecosystems.

Bald eagle nest were observed throughout the lower Yellowstone Valley at intervals ranging from 1 to 25 km and were commonly occupied during multiple years.

### **Variances:**

Discrete blue sucker and burbot spawning aggregations were not observed (fish were widely distributed and used a wide variety of habitats during putative spawning periods) and specific spawning habitats were resultantly not described.

Very few snapping turtles were captured during the course of the project, and none that were of sufficient size for attaching radios. For this reason, no data was obtained relative to movements and habitat use of snapping turtles.

No plovers or terns were observed along the river stretches covered during the project, and so no data was collected relative to distribution and nesting success for these species.

As any plover, tern, or snapping turtle work was intended to occur coincident with other field activities, none of the approved funding in the grant was earmarked specifically for this work.

### **Project Personnel**

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**Expenditure Recap:**

Proposed:

	Federal Share		Match		Total
Direct Costs	\$150,000		\$50,000		\$200,000
Indirect Costs	\$24,060		\$5,020		\$29,080
Total	\$174,060		\$58,020		\$232,080

Current Expenditures:

	Federal Share		Match		Total
Direct Costs	\$147,666.28		\$58,020.00		\$205,686.28
Indirect Costs	\$26,393.72				\$26,393.72
Total	\$174,060.00		\$58,020.00		\$232,080.00

Expense Detail:

	Federal	State
Salary & Benefits	\$119,609.69	
Lodging & Travel	\$ 21,263.94	
Materials & Supplies	\$ 5,906.65	
Contracted Services	\$ 886.00	\$ 44,270.00**
In-kind contribution*		\$ 13,750.00
Total	\$147,666.28	\$ 58,020.00

\* An in-kind contribution of \$3,930 was received in the form of donated project equipment storage.

\*\* The contracted services funds of \$42,198.36 are from a donation of proceeds from the sale of paddlefish roe by the local Chamber of Commerce, toward payment of contracted services.